REMARKS

The Specification has been objected to as introducing new subject matter into the disclosure. The Applicants have now amended the Specification to remove the previous additions that the Examiner considered as new subject matter.

Claims 1-33 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

Claim 1 has been amended to limit the value of the water percentage to between 20 to 80%. Support for "wherein the emulsion is useful as a soluble cutting oil" in claim 1 can be found in paragraphs 0014, 0039, 0040 and 0041 of the Specification. The phrase "wherein the emulsion is useful as a coolant" in claim 1 is supported by para 0014 of the specification.

The toxicity of the emulsion in claim 1 is supported by specification. The toxicity of mineral oil is due to poly nuclear aromatics which are absent in heavy alkyl benzene. This is a well known fact and is known by one skilled in the art.

Heavy alkyl benzene is considered a waste product because during manufacture of a product some unwanted product also produced, which is known as "waste" or "waste product". If the product has some utility or value then it is known as a "by-product". Because this heavy alkyl benzene is an unwanted product in the manufacture of LAB (dodecyl benzene), it is considered as "waste". However, it may also be considered as a "by-product" because it is now finding some application and uses as a "by-product" as supported by para 0017 of the Specification.

Heavy alkyl benzene sulfonate as emulsifier in claim 1 is supported by para 0021 of the specification as heavy alkylate sodium sulfonate.

"Mahua oil" has been deleted from claim 1. "2,6-ditertiary butyl-4-methyl phenol", "tetradecyl pyridinium bromide" and "Zinc dialkyl dithio phosphate" have also been deleted from claim 1, such that the Examiner's rejections should now be withdrawn.

Claims 1-33 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

The Examiner's rejection is respectfully traversed.

The word "waste" in claim 1 was added to clarify the value added. In the Specification word "by-product" is present and is synonymous with the term "waste". During manufacture of a product some unwanted product is also produced, which is known as "waste" or "waste-product". If the product has some utility or value, then it is known as "by- product". Because heavy alkyl benzene is an unwanted product in the manufacture of LAB (dodecyl benzene), it is a "waste" product but it is also known as well a "by-product" because they have found some application and uses for the "waste" product. Heavy alkyl benzene is a "by-product" or "waste-product" obtained during manufacture of dodecyl benzene, as it is very clear from the line of the claim that "a waste heavy fraction from detergent class linear alkyl benzene manufacturing". It is a definite product as its structure is defined as mentioned in para 0017 0f the Specification.

[From an online dictionary]

Waste product: An unusable or unwanted substance or material produced during or as a result of a process, such as metabolism or manufacturing.

By-product:

1. Something produced in the making of something else.

2. A secondary result; a side effect.

Value addition means market value. It is a well known fact that heavy alkyl benzene is available at $ 0.5 per kilogram while soluble cutting oil concentrate is available at $ 2.0 per kilogram in India. So, it is a value addition also and definite.

[From Wikipedia online]

In economics, the difference between the sale price of a product and the cost of materials to produce it is the value added. In national accounts used in macroeconomics, it refers to the contribution of the factors of production, i.e., land, labor, and capital goods, to raising the value of a product and corresponds to the incomes received by the owners of these factors. The national value added is shared between capital and labor (as the factors of production), and this sharing gives rise to issues of distribution.

[From an online dictionary]

Of or relating to the estimated value that is added to a product or material at each stage of its manufacture or distribution: *"Unlike the steel or aluminum industries, where heavier profits come from value-added fabrication, mining is the most lucrative stage of copper production" (Forbes).*

Heavy alkyl benzene sulfonate as emulsifier in claim 1 is supported by para 0021 of the Specification as heavy alkylate sodium sulfonate. Alkylate is synonymous to alkyl benzene. Both are the same. It is merely a typing error.

Caster oil has been deleted from claim 4. The claims should all be in proper form.

Claims 1-12 and 34 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Anantaneni, U.S. Patent No. 6,630,430, in view of Boffa, U.S. Patent No. 5,804,537; Tanaka, U.S. Patent No. 6,245,725 B1; Camenzind, U.S. Patent No. 7,026,438 B2; Van Dam, U.S. Patent No. 6,784,142 B2; Matsushita, U.S. Patent No. 5,741,763; Zoch, U.S. Patent No. 3,902,868; and Otaki, U.S. Patent No. 4,765,917.

The Examiner's rejection is respectfully traversed.

Claim 1 as now amended is directed to a metal working concentrate comprising heavy alkyl benzene having C22 – C26 carbon atom, a waste heavy fraction from detergent class linear alkyl benzene manufacturing, in the concentration range of 40 to 85.68 weight percent of the

concentrate, at least one sulfonate/oleate class emulsifier preferably sodium oleate, triethanolamine oleate, heavy alkyl benzene sulfonate, dodecyl toluene sodium sulfonate or mixture thereof in the range of 10 to 37.98 weight percent of the concentrate, synergistic combination of additive components having at least one triglyceride vegetable oil type lubricity booster preferably karanja oil, neem oil, rice-bran oil, or mixtures thereof in the concentration range of 2-10 weight percent of the concentrate. The concentrate also has at least one phenol/amine type antioxidant preferably from 2,6-ditetiary butyl phenol, 2,6-ditertiary p-cresol, Diphenylamine, Tertiary butyl phenol amino tetrazole, 2,6-dioctyl phenylene diamine or mixture thereof in the concentration range of 0.005-0.05 weight percent of the concentrate, at least one phenol/amine class fungicide component preferably o-cresol, phenol, m-cresol, cresylic acid, Benzyl thri-ethyl ammonium chloride, or mixture thereof in the concentration range of 0.005-0.05 weight percent of the concentrate, at least one organic sulfide/phosphosulfide type extreme pressure additive component preferably selected from dibenzyl disulphide, sulfurized vegetable oil, phosphosulfidurized decyl oleate molybdate, phosphothio pentadecyl phenol molybdate, or mixture thereof in the concentration range of 0.005-0.05 weight percent of the concentrate, at least one triazole/sulfonate type antirust component preferably 1H-benzotriasole, ditertiary butylated 1H-Benzotriazole, calcium petroleum sulfonate, calcium heavy alkylate sulfonate or mixture thereof in the concentration range of 0.005-0.05 weight percent of the concentrate, at least one alcoholic co-surfactant component preferably isopropanol, n-butanol, iso-butanol, iso-amyl alcohol, 2 ethyl hexanol, di ethylene glycol, tri ethylene glycol or mixture thereof in the range of 1-10 weight percent of the concentrate, at least one sulfonate/sulfate coupling agent preferably ligno sulfonate, petroleum sulfonate, sodium dodecyl benzene sulfonate, sodium lauryl sulfate or mixture thereof in the range of 0.5 to 1.0 weight percent of the concentrate, alkali earth metal salt component preferably sodium carbonate, sodium hydrogen carbonate,

calcium carbonate, calcium oxide or mixture thereof in the range of 0.5-1.0 weight percent of the concentrate, that when converted into emulsion by stirring it in 20 to 80 weight percent water. The emulsion is useful as a general purpose soluble cutting oil that acts as a coolant/engineering aid in metalworking, which has less toxicity than mineral based oil and adds value to a waste product, i.e. heavy alkyl benzene.

The Applicants' invention is directed to a metalworking concentrate from the waste product heavy alkyl benzene. This invention is not taught or suggested by a combination of any of the above prior art references.

In the cited prior art references "heavy alkyl benzene" is not discussed. Only alkyl benzene is mentioned but for a different application. Metalworking fluid from mineral oil was found in the cited prior art but metalworking fluid from heavy alkyl benzene was not found in the cited prior art. The additive pack of synergistic component as mentioned in subject application is not mentioned in the prior art.

"Heavy alkyl benzene" is not mentioned in cited prior art so it is a great non-obviousness. Thus comparing or equating HAB with other alkyl benzene is not justified.

Thus there are many differences between the subject application and the cited prior art references.

The Applicants' have many publications on water-oil-emulsifier behavior indicating the originality of their work. More than 10 years of serious research work was taken to reach this stage. The main objective is very clear: to produce a less toxic product and value addition to a waste petrochemical.

Anantaneni, U.S. Patent No. 6,630,430 discloses a lubricating oil composition without experimentation, wherein the examples are based on the synthesis of alkyl benzenes. Other texts/portions of the references are related to the wide concept of detergent, alkyl benzene and

its derivatives. As stated in Anantaneni (See 2nd para after examples):

> "Although the present invention has been described largely in reference to the alkylation of benzene using olefins as an alkylating agent, it should be appreciated that substituted benzenes are also useful as starting materials within the context of the present invention, provided that the chemical groups appended to the benzene ring are not prohibitively de-activating of the benzene ring structure. In this regard, toluene is a functionally equivalent starting material, which may be used in place of all or part of the benzene employed. Other substituted benzenes such as xylene are also useful in this regard, as well as ethyl benzene, propylbenzene, and butylbenzene".

Thus, the '430 patent is directed to the synthesis of alkyl benzene whereas the Applicants' invention is for the composition of a metalworking fluid particularly a soluble cutting oil and these are completely different compositions.

Anantaneni '430 mentioned in the abstract of the patent (last line) that *".... and may be employed as additives in various lubricating compositions, including motor oils, cutting fluids, emulsions, and motor fuels."*

Alkyl benzene is a class or group of chemicals. All alkyl benzenes can not be the same. Natural petroleum also contains alkyl benzene but petroleum can not be considered similar to all alkyl benzenes. Anantaneni '430 describes particular types of alkyl benzenes, which are "2-phenyl" derivatives (see claim 1). 2-phenyl and benzene is not one compound. The Applicants' invention is related to heavy alkylate, a residue fraction of detergent class of alkyl benzene (claim 1). Detergent class alkyl benzene is chemically dodecyl benzene. It is produced by reacting propylene tetramer (dodecene) with benzene. Its residual fraction (heavy alkylate) is not restricted to 2-phenyl derivatives (such as decyl toluene or decyl 2-methyl benzene: di-alkyl benzene). Thus, both alkyl benzenes are different.

The novelty of the Anantaneni patent is an "efficient detergent" (claim 1) whereas in the Applicants' invention one point of novelty is a metalworking fluid material which is "less toxic than mineral oil" (claim 1). The toxicity of mineral oil is due to its component of a condense

ring or poly-aromatic compound. Alkyl benzene is free from this toxicity and help in reducing pollution and unhealthy mist hazards to operators, thus it is different.

Anantaneni '430 also teaches a method to produce di alkyl benzenes. The Applicants' invention is directed to a composition of soluble cutting oil (metalworking fluid) and again this is very different.

Anantaneni '430 does not describe the aqueous solution preparation of lubricants. The Applicants' invention does describe aqueous solution/emulsion preparation and that stable emulsion is suitable for metalworking, i.e., cutting, drilling, milling, rubbing, etc.

The Anantaneni patent discloses a lubricating composition for a metal surface, especially an internal combustion engine (claim 1, 38 & 39). Anantaneni '430 is restricted to derivatives of 2-phenyl type of alkyl benzene (claim 1) "*in which n may be any integer between 13 and 27, and in which R.sub. 1, R.sub.2, R.sub.3, R.sub.4, and R.sub.5 are each independently selected from the group consisting of: hydrogen, a methyl group, an ethyl group, a propyl group, a butyl group, a sulfonic acid group, a sulfonate group, and a sulfonate ester group*". (Claim 1). There is no term like "fractionation" in any claim or the disclosure of this patent. During synthesis, isolation is the usual prior art processing procedure but not fractionation. Fractionation is the usual practice for dividing a product into two or more useful products. In the subject application "alkyl benzene" is the product of alkyl chain C12 or its multiple to the benzene. The residual fraction of this heavy alkylate is a mixture of similar alkyl benzene. On the other hand, the detergent of Anantaneni '430 is restricted to use of a sulfonate from a 2-phenyl type of alkyl benzene while in the present application the emulsifier is from a heavy alkylate sulfonate or oleate. Use of an oleate will also reduce the toxicity. Vegetable oil is also used in the subject application. In the present application, an aqueous emulsion from composition is useful for soluble cutting oil and it can not be useful for internal combustion

engine as lubricant. Thus, the compositions and their purpose are quite different.

Anantaneni '430 discloses compositions comprised of alkyl benzene, having 18 to 30 carbon atoms, to enhance detergency (column 1, lines 20-25, 55-58). As per literature, sulfonate acts in different ways according to its structure and molecular weight. Sulfonate of lower molecular weight or di-sulfonate act as de-emulsifiers, sulfonate having molecular weight around 420-450 act as emulsifier, sulfonate of higher molecular weight act as industrial detergent/dispersant and sulfonate of highest molecular weight act as rust inhibitors or anti-corrosion. All sulfonates can not be the same. If Anantaneni targeted "detergency" and the subject application targeted "emulsification" then the structure, degree of substitution and molecular weight range of sulfonate will all be different. In the present application, the carbon range in the alkyl chain is suitable for emulsifier. Even when the carbon number overlaps, their structures are different. When the components are different, it will lead to different compositions.

The Anantaneni patent discloses that *the alkyl benzenes are present in the lubricating composition from 35 to 82 wt % of the total composition (See claim 1, column 32).* That means the composition will be used in that ratio. In the Applicants' invention, alkyl benzenes are present in 40 to 85.68 wt % and when emulsified in water in 10 to 40 % wt. The concentration of alkyl benzene will be from 4 to 8.568 (at 10 %) and 16 to 34.272 (at 40% in water). So, the compositions contain alkyl benzene at quite different ratio when used.

Furthermore, Anantaneni '430 discloses the use of additives in the composition including extreme pressure additives, antioxidants and more (column 21, lines 38-45). Anantaneni does not specifically disclose the additives and the use of the composition as emulsion in water as a general purpose cutting oil. For examples, he mentioned "anti-oxidant" but he does not specify which ones may be used. In the subject application, additives are

specified (See claims 1 to 13). For example, the anti-oxidant is specified *"an antioxidant component which is an alkyl phenol, aromatic amine or substituted alkyl phenol in concentration between 50 – 500 gm/liter,* and further specified *wherein the antioxidant component is an alkyl phenol or aromatic amine or substituted alkyl phenol selected from 2, 6-ditertiary butyl phenol, 2,6- ditertiary p-cresol, Diphenylamine, Tertiary butyl phenol amino tetrazole and 2, 6-dioctyl phenylene diamine.*

For soluble cutting oil, the test for stability of emulsion as per ASTM methods or another standard method is needed and it is not mentioned by Anantaneni '430 and it is mentioned by the subject application and thus, the subject application is different and non-obvious.

The present application is quite different from Boffa, U.S. Patent No. 5,804,537, which is directed to emulsifiers because Boffa discloses the "tri-metal detergent mixture" in the claims and abstract. Tri-metal detergent is not a specific word. In fact Boffa '537 uses overbased detergent mixtures of a particular TBN for engine cleanliness and does not specify which detergent is used. It may be petroleum sulfonate, alkyl aryl sulfonate, caboxylates, etc. (Please see detailed description para 4 of U.S. Patent No. 5,804,537). This paragraph is based on a literature survey and patents 3,150,088, 3,150,089, 5,232,614, 4,935,576, 4,982,045, etc. Alkyl benzene sulfonate is not a finding of Boffa in US 5,804,537. It was a previously known fact. The effect of overbased sufonates as mix detergent is not adopted by Anantaneni's patent. However, the Applicants' invention is for soluble cutting oil and here sulfonate is efficient in water-oil emulsion formation, which is non-obvious in that patent. Thus, the alkyl benzene sulfonate used by the Applicants is different from the sulfonate used by Boffa or Anantaneni.

Boffa '537 uses overbased mixed detergent which may contain alkyl benzene sulfonate. The overbased detergent is useless in aqueous media or emulsion. In oil media, due to oxidation some organic acid forms and to neutralize those acids, overbased detergent or extra

alkali is needed as in the case of engine lubricants, but in aqueous media overbased detergent is not required for neutralization of oxidized product.

The main function of soluble cutting oil is to keep the metal surface cool. Heat is generated during metal cutting or metal to metal friction. Water acts as a coolant and oil acts as lubricant. Due to this water-oil emulsion is used. But water can cause rusting/corrosion. A suitable emulsion can reduce rusting. Thus, the sulfonate of Boffa '537 and Anantaneni '430 is not suitable for soluble cutting oil.

Use of heavy alkyl benzene as a lubricant in an engine has no relation with the present invention. The metalworking fluid has entirely different uses as compared to I.C. Engine lubricants. Their additive package is also entirely different.

Boffa '537 and Anantaneni '430 selected the application and developed the alkyl benzene overbased sulfonate and alkyl benzene sulfonate accordingly. In the Applicants' invention, which is a value addition to heavy alkylate, the selection of base material is fixed. Heavy alkylate is tailored to be suitable for soluble cutting oil. Synthesis of heavy alkylate is not the purpose of the Applicants' invention. Thus, the present invention is different from Boffa and Anantaneni.

In Tanaka '725 the oiliness component is mentioned in claim 5. In the detailed description, all possible names of compounds including castor oil for oiliness are given. Anantaneni '430 mentioned in the detailed description a friction modifier which includes derivatives of coconut oil. Castor oil has a peculiar characteristic of non-solubility in oil and water. It is not clear from patents of Tanaka and Anantaneni that castor oil or other additives will be useful in oil-water emulsion as well. They have discussed these only for oil-soluble or single phase oil lubricants. It is non-obvious because the Applicants' invention is dealing in oil-water phase, and these do not.

The amount of additive is not an absolute quantity. It depends upon the nature of base oil and application needed. Base oil and additive composition of engine oil will not be suitable for gear oil or cutting oil or greases. Additives and its amount will change with needs accordingly. The patents of Tanaka and Anantaneni are not teaching this aspect and which additive in what quantity will be needed for oil-water emulsion is not mentioned in these patents.

The present patent application is quite different from Camenzind '438 on anti-oxidant (III), antirust agent (IV) and coupling agent (V) because as per the abstract of Camenzind:

> "The invention relates to liquid sulfur-containing antioxidants and to compositions comprising them. The novel lubricant compositions comprise the reaction product of a selected group of 5-tert-butyl-4-hydroxy-3- methyl (or tert-butyl) phenyl substituted carboxylic acid esters with thiodiethylene glycol and a mono-hydroxy alcohol with a carbon chain length higher than 4 C-atoms. The novel lubricant compositions are highly resistant to oxidative degradation and are capable of reducing the negative effects of deposits, such as black sludge, in motor combustion engines, particularly spark ignition internal combustion engines."

The base oil of the Camenzind patent "a reaction product" is quite different from the base oil "heavy alkylate" of the subject application. The composition is for motor combustion engine and different from the Applicants' invention for soluble cutting oil. Antioxidant is restricted to liquid sulfur containing product, which is different from anti-oxidant of the Applicant's invention. Thus, the subject application is different from the teachings of Camenzind.

Camenzind '438 only relates to "liquid sulfur-containing antioxidants" and "reaction product of a selected group of 5-tert-butyl-4-hydroxy-3- methyl (or tert-butyl) phenyl substituted carboxylic acid esters with thiodiethylene glycol and a mono-hydroxy alcohol with a carbon chain length higher than 4 C-atoms." All antioxidants are not the same and all lubricants are not the same. In claims 5 and 6 of Camenzind, only the composition of the above antioxidant and lubricant is described. There is no mention of alkyl benzene based soluble cutting oil.

In column 7, line 60-66 of Camenzind it states that:

> "The invention relates also to a method of improving the performance properties of lubricants, which comprises **adding to the lubricant at least one product as defined above.** The lubricant compositions, e.g. greases, gear fluids, metal working fluids and hydraulic fluids, may additionally contain further additives, which are added to improve further their performance properties. These include: other antioxidants, metal deactivators, rust inhibitors, viscosity index improvers, pour-point depressants, dispersants, detergents, high pressure additives and antiwear additives. Such additives are added in customary amounts, each in the range from 0.01 to 10.0% by weight."

All of the additives mentioned are suitable for the particular base oil that is reaction product mentioned in Claim 1. These are not universal additives. The metalworking fluid described in this patent is also made from same base oil. Camenzind '438 does not teach that these additives will be suitable for heavy alkyl benzene (as lube base oil) based metalworking fluid. Thus, the Applicants' invention is not anticipated by Camenzind '438.

Van Dam '142 discloses a lubricating composition for diesel engine (claim 10 and 12). All of the additives mentioned here are effective in oil phase and the composition is suitable as a lubricant for diesel engine. It is not clear that these additives are also suitable for water-oil emulsion phase.

Van Dam '142 also discloses a lubricating composition for diesel engine. The title is "Lubricating oil composition comprising borated and EC-treated succinimides and phenolic anti-oxidant". Here three components are essential parts that are hydrocarbon base-oil, borated succinimide and phenolic antioxidant (claim 1). Other additional additives mentioned here are suitable in this combination. There is no teaching in this patent of what would happen if the composition is an oil-water emulsion (base), sulfonate/oleate (emulsifier) and amine (anti-oxidant), the combination mentioned in the subject application. Thus, the Applicants' invention is not obvious over Van Dam '142.

In Matsushita, U.S. Patent No. 5,741,763 the aim is to give a composition of a lubricating

oil (for machines operation), which is easily separable if mixed into soluble cutting oil. This patent is not for a composition of soluble cutting oil. This lubricating oil is highly hydrophobic and will not mix with even oil-water emulsion. The wear preventive agent may be added to this composition. Matsushita is not sure about the suitability of dibenzyl disulfide and its quantity, it is not mentioned. Matsushita '763 does not teach the utility of additives. The quantity of total additive is 0.01 to 5 wt % and does not particularly mention dibenzyl disulfide. Its suitability for soluble cutting oil emulsion is not indicated. It is non-obvious for the Applicants' invention.

It is possible that Matsushita '763 only worked for oil and sulfonate composition and as per literature he has used "commercial additive pack". "Within the limits it is not detrimental to the objective of the present invention, a wide variety of additives conventionally used in lubricant oils, such as antioxidants, wear preventive agents, friction adjusters, metal deactivators, extreme pressure agents, rust preventives, adhesion improving agents and the like, may be added to the lubricant oil composition of the present invention." (Present invention, para 21). Only Matsushita is quoting from the literature, Matsushita has not worked with additives.

Zoch '868 discloses the liquid additives in vapor phase for fuel of internal combustion engine to enhance the combustion. For this purpose Zoch proposes using various oxygenate or oxygen carrying liquids. Alcohol, ketone, ester and ether fall in this category. These compounds will provide additional oxygen for combustion. In the Applicants' invention, iso-propyl and other alcohol is used but as a co-surfactant. This co-surfactant easily mixes with water to reduce oil water interfacial tension and helps the emulsifier in completing its action of providing stable oil-water emulsion. The emulsifier used here has more oil solubility than water solubility. Zoch '868 discloses fuel additives in vapor phase while the Applicants' invention describes lube additive containing soluble cutting oil, which

has water-oil liquid phase and is not used for combustion. In the Zoch patent, alcohol is burnt in the vapor phase but in the subject application the alcohol remains in emulsion and helps in emulsion stability and its formation. Ketone and ester will not bc useful as a co-surfactant. This action is not described by Zoch and thus, thc Applicants' invention is not obvious in view of Zoch '868.

Otaki, U.S. Patent No. 4,765,917 discloses water based lubricants on dies for metal forging (claims 1, 8, 9, 10 and 11). Forging means giving shape to molten metals at high temperatures which may be in thousands degree centigrade. At this temperature, dies may stick together and to avoid this, some solid compounds are used. Water acts as a carrier here and after application it evaporates. Only salts go into action as solid layer on metals. In the subject application, for soluble cutting oil, additives remain in emulsion phase and works at comparatively lower temperature around 60 to 80 degree centigrade. There is a difference between forging and cutting and media are also different. Additives composition for soluble cutting oil can not be guess from Otaki.

Otaki '917 uses a large portion of water-soluble substance including extreme pressure additive (phosphates, calcium carbonatcs, tri-metal salt, etc) in water based lubricants. In thc Applicants' invention a large portion of additives including extreme pressure additives are oil soluble or dispersible.

Calcium carbonate in the Otaki '917 patent acts as cxtreme pressure additive on high temperature to avoid fusion of both parts of dies. In the subject application calcium carbonate is used to provide mild alkalinity to keep the pH of emulsion at 7 or neutral, this is required when oleate emulsifier is used. Acidity may cause dissociation of oleate soap and loss of emulsifying properties. Oleate as emulsifier is preferred for further reduction of toxicity of the composition as oleate is less toxic than sulfonate. This aspect is not described in Otaki US '917 thus, the Applicants invcntion is not obvious in view of Otaki.

The Examiner has picked one small element from each of eight references. There is no suggestion or teaching to combine them. Additionally, even if they are combined as the Examiner states, one still does not arrive at the Applicants' invention. More specifically, a particular composition of compounds may work in an oil based system, but will not work the same in an oil/water system. Thus, the combination of small components of each reference without a teaching of how the components will work together should not be the basis of obviousness. The Examiner cannot use hindsight to determine that if an element is selected from each of the cited references that the Applicants' invention is obvious. It is not obvious and in fact, the combination is not even suggested. Also, one skilled in the art would understand that one could not pick out an element used in an oil based system and then assume that it would work the same in an oil/water system because more times than not the results were not the same in both systems.

Determination that a novel combination would have been obvious requires supporting teaching in prior art. Determination that a novel combination would have been obvious requires supporting teaching in prior art. *In re Newell*, 13 USPQ2d 1248, (Fed. Cir. 1989). A retrospective view of inherency cannot serve as a substitute for actual teaching or suggestion in prior art which supports selection and use of various elements in particular claimed combination. *Id.* "That which may be inherent is not necessarily known." *In re Newell*, (quoting *In re Spormann*, 150 USPQ 449 (CCPA 1966).

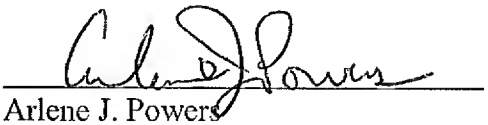
There is nothing in the patent statute which requires that an invention be superior to the prior art to be patentable. *Custom Accessories v. Jeffrey-Allan Industries*, 1 USPQ2d 1196,1199, n. 12 (Fed. Cir. 1986). Also, there is no requirement that there be new, unusual and unexpected results. However, objective evidence of secondary considerations may often be considered before a

conclusion of obviousness is reached. *Minnesota Mining and Manufacturing Company v. Johnson & Johnson Orthopaedics, Inc.*, 24 USPQ2d 1321 (Fed. Cir. 1992).

In view of the foregoing, the Applicants contend that the amended claim and the claims dependent there from are in proper form. Applicants also respectfully contend that the teachings of Anantaneni, U.S. Patent No. 6,630,430, in view of Boffa, U.S. Patent No. 5,804,537; Tanaka, U.S. Patent No. 6,245,725 B1; Camenzind, U.S. Patent No. 7,026,438 B2; Van Dam, U.S. Patent No. 6,784,142 B2; Matsushita, U.S. Patent No. 5,741,763; Zoch, U.S. Patent No. 3,902,868; and Otaki, U.S. Patent No. 4,765,917 do not establish a *prima facie* case of obviousness under 35 U.S.C. §103(a). Thus, claims 1-34 are considered to be patently distinguishable over the prior art of record and should be allowed.

The Commissioner is authorized to charge Deposit Order Account No. 19-0079 for any fees that may be required.

Respectfully submitted,



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